

## VIII. Haz-Map

<http://hazmap.nlm.nih.gov>



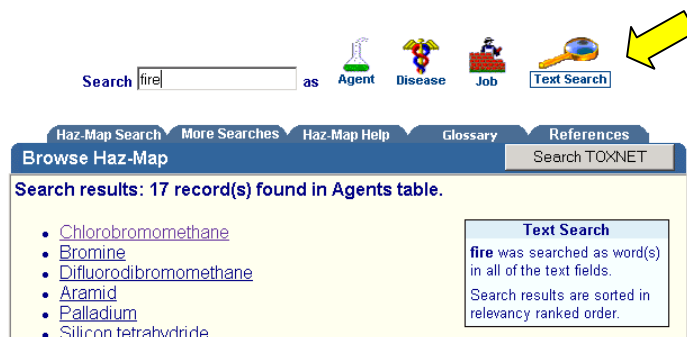
Haz-Map is a database designed to link jobs to occupational diseases, to hazardous agents that can cause disease, and to other job tasks that can cause disease. The logo above, and at the top of every website, shows how everything is connected in this database. Each point on the map represents a table of information on that topic. These tables are linked together in this database.

- **Jobs** – Haz-Map includes over 250 different jobs that are associated with occupational diseases, from Aircraft Assemblers to Restaurant Cooks.
- **Job Tasks** – Haz-Map contains nearly 200 job tasks that can cause disease. For example, a job task for zoologists could be “handling infected rodents (bite)” leading to possible “rat bite fever.”
- **Occupational Diseases** – Haz-Map includes records of over 180 diseases associated with specific job tasks.
- **Agents** – Over 1,100 hazardous agents are included in this database. A hazardous agent can be a chemical, like ethyl alcohol or some other substance with hazardous properties. An example would be herbal tea, which has plant-derived allergens which can cause asthma.
- **Symptoms** – Symptoms of occupational diseases have been cataloged here and described. An example of a symptom would be “hallucinations.”
- **Industry** – Over 440 industries are included in this database. Each industry has high-risk job tasks associated with it.
- **Non-Occupational Activities** – 25 activities, which have hazardous agents associated with them, are also included in Haz-Map. These activities are often related to crafts, like “batik printing,” or other activities, such as “living in a house with old plumbing.”
- **Processes** – 50 processes are described, which are associated with hazardous agents. Examples of processes are “Forging” or “Silk-Screen Printing.”

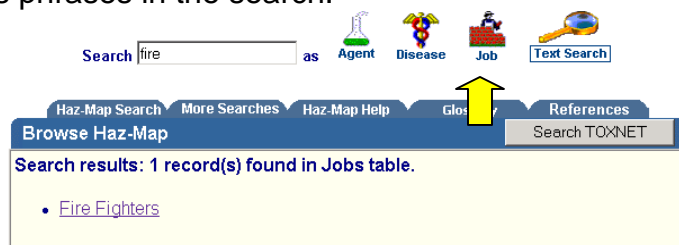
## Searching Hazmap

### Text search

- **Text search:** Enter a query, and click on the Text Search icon. The query words will be searched as text words in all Haz-Map text fields. Search results display in relevancy ranked order.

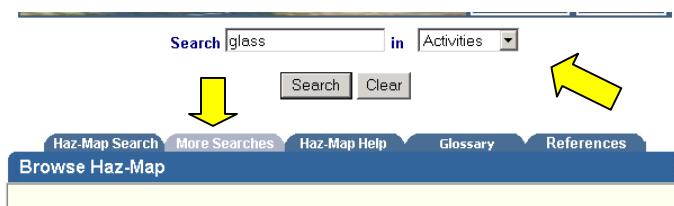


- **Search by agent, disease or job:** To query multiple words by Agent Name, Disease Name, or Job Name, enter your query, and click on the Agent, Disease, or Job icon. The search will make wild card matches. The query will match data containing all of the query terms as words or word fragments in any order. For example, a search for *acute anemia* as Disease will be translated into a query for both "*\*acute\**" and "*\*anemia\*.*" Multiple words enclosed by double quotes will be treated as phrases in the search.



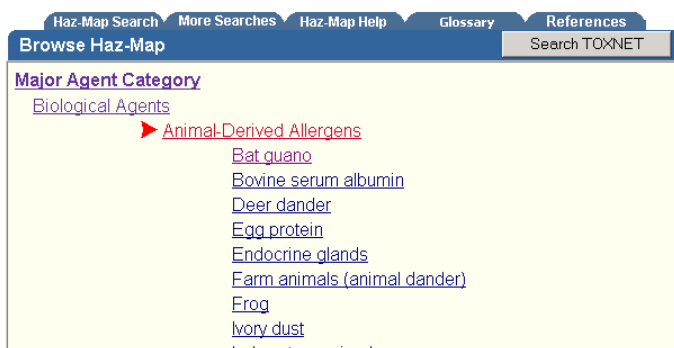
- **Special features for chemical searching:** When searching for agents, if there is an exact match of an agent name, this name will appear first in the search results. If the search query is enclosed by double quotes, only the exact match will be displayed. Otherwise, other records that contain the words or word fragments will be listed after the first record. For example: a search of *ethyl alcohol* will return Ethyl Alcohol first. In addition, 20 other records will be returned because they all contain *ethyl* and *alcohol* in their Name and Synonyms fields. You can also search a chemical by its CAS Registry Number.

- **Searches by other categories:** Click on the More Searches tab to find additional information by other categories, including Activities, Industries, Job Tasks, Processes, and Symptoms. Using the drop-down menu, select a table that you would like to search, and enter the query words in the box. The query words will be searched as text words in the selected table. The results will display in relevancy ranked order.



### **Browse by categories**

- To browse by category, simply click on the link of a major category, and the tree will expand to the next level of information. You can navigate forward or backward at any time by clicking on the links.



### **Browse alphabetically**

- You can also browse all the tables by alphabetical listing of the records. [Note that agents records have a special sort order, for example, o-Anisidine appears in "A", not in "O".]



**Browse agents by adverse effects**

- You can search for all agents that have one or more potential adverse effects. For example, view all agents that can cause occupational asthma, or view all agents that can cause both asthma and lung cancer. For checkboxes, you may select as many items as you like.

**Browse Haz-Map by Process and Adverse Effects**

Find agents associated with one or more criteria, for example, search for the agents associated with "Using Disinfectants", with "asthma", or with "Using Disinfectants" AND "asthma."

Select an industrial process:

Select items in this form to search for all agents that have the adverse effects:

Lung Toxin	Neurotoxin	Hematotoxin
<input checked="" type="checkbox"/> asthma	<input type="radio"/> motor neuropathy	<input type="radio"/> methemoglobinemia, primary
<input checked="" type="checkbox"/> pneumonitis	<input checked="" type="radio"/> sensorimotor neuropathy	<input type="radio"/> methemoglobinemia, secondary
<input type="checkbox"/> fibrosis	<input type="radio"/> Parkinson's syndrome	<input checked="" type="radio"/> unspecified
<input type="checkbox"/> chronic bronchitis	<input type="radio"/> CNS solvent syndrome	<input type="radio"/> anemia, aplastic
<input type="checkbox"/> lung cancer	<input type="radio"/> other CNS neurotoxin	<input type="radio"/> anemia, hemolytic
	<input type="radio"/> unspecified	<input checked="" type="radio"/> unspecified

- Adverse effects in some categories are displayed in a list of radio buttons. For radio buttons, you may select only one option in each group. For example, in the category Neurotoxin, pick Parkinson syndrome to see all agents with the potential to cause this syndrome.
- In the search result page, you can click on the Search Details link to see the conditions that were checked for the search.

**Query:**  
asthma, pneumonitis, sensorimotor neuropathy,

**Search results: 1 record(s) found.** [Search Detail](#)

- [Ethylene oxide](#)

**Find diseases by jobs and symptoms**


Haz-Map Search More Searches Haz-Map Help Glossary References

Browse Haz-Map : find diseases by jobs & symptoms Definition

Find diseases associated with one or more criteria, for example, search for the diseases associated with "carpenters", with "cough", or with "cough" AND "carpenters".

Select a job:

Animal Breeders Search Clear

Indicate symptoms:

**General**

- ☐ anorexia
- ☐ dizziness
- ☐ fatigue
- ☐ fever
- ☐ myalgia
- ☐ syncope
- ☐ weight loss

**Neurological**

- ☐ concentrating, difficulty

**Respiratory**

- ☐ chest tightness
- ☐ clubbing
- ☐ cough
- ☐ dyspnea, acute
- ☐ dyspnea, exertional
- ☐ inspiratory rales
- ☐ pulmonary edema
- ☐ sputum production
- ☐ wheezing

**Pulmonary Function**

- ☐ obstructive defect

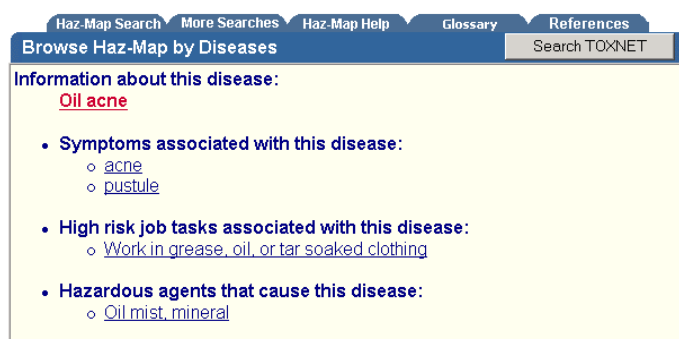
**Skin**

- ☐ acne
- ☐ burn, caustic or corrosive chemical
- ☐ cyanosis, acute
- ☐ dermatitis
- ☐ ecchymoses, spontaneous
- ☐ erythema migrans
- ☐ keratoses, brown discoloration
- ☐ lymphadenitis, acute
- ☐ lymphadenopathy

- **Search by Jobs:** You can search diseases related to a job by selecting a job from the pull-down menu.
- **Search by Symptoms:** You can search diseases from their symptoms by checking the symptoms grouped by organ/tissue systems.
- **Search by Jobs and Symptoms:** By selecting both *Job* and *Symptoms*, you can find diseases related to both. For example: searching *carpenters* and *cough*.
- You can click on Search Details on the search result page to see what job and/or symptoms you have selected.

**Display of related information**

- This page shows all the links to information related to the particular record of interest. An example is the disease aplastic anemia. In addition to the link to the main record for this disease, you will also see links to "Symptoms associated with this disease," "Hazardous agents that cause this disease," and "High risk job tasks associated with this disease."



Haz-Map Search More Searches Haz-Map Help Glossary References

Browse Haz-Map by Diseases Search TOXNET

Information about this disease:

**Oil acne**

- Symptoms associated with this disease:
  - [acne](#)
  - [pustule](#)
- High risk job tasks associated with this disease:
  - [Work in grease, oil, or tar soaked clothing](#)
- Hazardous agents that cause this disease:
  - [Oil mist, mineral](#)

## Search TOXNET

- Click on this button to search all TOXNET databases.
- You can enter search words in the pop-up prompt box to make a search.
- Highlighting a section of text on the page before clicking on TOXNET will run the search on those words.

The screenshot displays two web browser windows. The left window, titled 'Haz-Map: Occupational Exposure to Hazardous Agents', shows a search for 'Aplastic anemia'. A yellow arrow points to the 'Search' button. The right window, titled 'TOXNET - Microsoft Internet Explorer', shows the search results for 'Aplastic anemia' across various databases.

**Search Results:**

Database	Records found
TOXLINE Special	243
DART Special	8
HSDB	216
IRIS	4
GENETOX	0
CCRIS	0
TRI	0
CHEMIDplus	0

## Search Results

Each of the tables in the database produces a results screen with specific information unique to that category. Following are sample results screens for each category.

What Haz-Map primarily does is to link all of the categories together, so the descriptions of each category (below) are the various results of the searches that can be done in Hazmap.

### Jobs

Haz-Map Search More Searches Haz-Map Help Glossary References	
Browse Haz-Map Search TOXNET	
<b>Job Name</b>	Fire Fighters
<b>Definition</b>	Control and extinguish fires or respond to emergency situations where life, property, or the environment is at risk. Duties may include fire prevention, emergency medical service, hazardous material response, search and rescue, and disaster management. [SOC] Firefighters are exposed to simple asphyxiants, chemical asphyxiants, and pulmonary irritants. [Bizovi KE. Smoke Inhalation Among Firefighters. Occup Med. 1995 Oct-Dec;10(4):721-33.]
<b>Category</b>	Other Service
<b>SOC Code</b>	33-2011
<b>Synonyms</b>	See "Firefighting" in Processes.

Definition, Job Name and SOC Code information comes from the 1997 *Standard Occupational Classification (SOC) System*, as well as other listed sources.

Note that *Synonyms* includes another place to look up information on Fire Fighters (in the Processes table).

### Agents

The results found under agents depend on whether or not the agent is a chemical.

Sample of an agent that is not a chemical:

Haz-Map Search More Searches Haz-Map Help Glossary References	
Browse Haz-Map Search TOXNET	
<b>Agent Name</b>	Monkey dander
<b>Major Category</b>	Biological Agents
<b>Category</b>	Animal-Derived Allergens
<b>Comments</b>	Occupational asthma reported in 2 laboratory workers; [Malo]
<b>Reference Link</b>	<a href="#">Monkey dander asthma</a>
<b>Adverse Effects</b>	
<b>Asthma</b>	Yes

Sample of a chemical agent:

Browse Haz-Map	
<a href="#">Agent Name</a>	Lead
<a href="#">CAS Number</a>	7439-92-1
<a href="#">Formula</a>	Pb
<a href="#">Major Category</a>	Metals
<a href="#">Synonyms</a>	Plumbum;
<a href="#">Category</a>	Metals, Elemental
<a href="#">Description</a>	A heavy, ductile, soft, gray solid; inorganic lead includes lead oxides, metallic lead, and lead salts (including organic salts such as lead soaps but excluding lead arsenate).
<a href="#">Sources/Uses</a>	<p>MINING, SMELTING, OR METALLURGY: Produce lead fume by primary or secondary smelting--includes brass, copper, and lead foundries and scrap metal recycling operations</p> <p>MANUFACTURING: Lead-acid battery, crystal glass; lead joints/babbitt; pewter; fishing weights; leaded or stained glass; paint and ink; leaded plastics; ammunition; electronic components (ceramic coated capacitors and resistors); electrical components using fritted glass; lead pipe, sheet, solder, type metal, cable shielding, or anodes; ceramics (mix glaze &amp; fire kiln); mix and weigh lead powders;</p> <p>USING, ALTERING, REPAIRING, DISMANTLING OR COLLECTING FOR DISPOSAL: Weld, cut, braze, grind, sand or blast old paint; houses and buildings (painted before 1978); bridges; ships; steel towers; water, petroleum or underground tanks; Produce lead fume or dust by heating, machining, or grinding lead products; radiator repair;</p>

This database gives a lot of very detailed information about chemicals in the table. If you look below, you will see that much of the information is extremely technical. The underlined links on the left take you to the glossary, which explains the meaning of the information in that field.

<a href="#">Skin Designation (ACGIH)</a>	No
<a href="#">Bioaccumulates</a>	Yes
<a href="#">TLV (ACGIH)</a>	0.05 mg/m3
<a href="#">PEL (OSHA)</a>	0.05 mg/m3
<a href="#">MAK</a>	0.1 mg/m3, inhalable fraction
<a href="#">IDLH (NIOSH)</a>	100 mg/m3
<a href="#">Excerpts from Documentation for IDLHs</a>	Basis for revised IDLH: No inhalation toxicity data are available on which to base an IDLH for lead compounds.
<a href="#">Explanatory Notes</a>	Melting Point = 621 degrees F;
<a href="#">Half Life</a>	Blood: 1-3 months; whole body: 5 years; [TDR, p. 1514]
<a href="#">Reference Link</a>	<a href="#">Clinical evaluation and management of lead-exposed construction workers</a>
<a href="#">Flammability (NFPA)</a>	1: must be preheated
<b>Adverse Effects</b>	
<a href="#">Anemia</a>	Anemia, Hemolytic
<a href="#">Neurotoxin</a>	Motor Neuropathy
<a href="#">Nephrotoxin</a>	Yes
<a href="#">Reproductive Toxin</a>	Yes
<a href="#">IARC Carcinogen</a>	Possible Carcinogen



## Occupational Diseases

Browse Haz-Map	
<b>Disease/Syndrome</b>	Anthrax
<b>Category</b>	Infection, Occupational
<b>Acute/Chronic</b>	Acute-Severe
<b>Synonyms</b>	Malignant pustule; Malignant edema; Woollorter disease; Ragpicker disease; Bacillus anthracis infection
<b>Comments</b>	The skin lesion begins as a red-brown papule that becomes indurated and then ulcerates to produce a black eschar. [Merck Manual, p.1158] The papule becomes a depressed, black eschar within 2-6 days. The skin lesion may be confused with orf. Cutaneous anthrax may spread to regional lymph nodes and beyond to cause the systemic form of the disease. Untreated cutaneous anthrax has a case-fatality rate of 5%-20%; it can be effectively treated with antibiotics. Deadly airborne spores can cause inhalation anthrax after dispersal in hide tanning, wool processing, and bone processing. A vaccine exists for laboratory workers, military personnel, and others high-risk workers. [Chin, p. 20-25] Pneumonia is unusual in inhalation anthrax; therefore, the pathogen cannot be isolated from sputum. Hemorrhagic meningitis is present in 50% of cases. The WBC count is elevated. [http://www.usamriid.army.mil/education/bluebook.html]
<b>Latency/Incubation</b>	1-7 days
<b>Diagnostic</b>	Stain; Culture; Paired sera
<b>ICD-9 Code</b>	022.9
<b>Available Vaccine</b>	Yes

Disease information comes from the *International Classification of Diseases (ICD-9)* and a variety of other sources (listed on the site).

The chart on diseases describes the disease with additional comments, provides information as to whether or not the disease is acute (sudden and possibly life threatening) or chronic (onset of symptoms is gradual and long-lasting), and tells whether or not there is a vaccine available.

## Job Tasks

Browse Haz-Map	
<b>Job Task Name</b>	Heat or machine chromium alloys
<b>Associated Diseases</b>	Occupational asthma has been reported in welders, chrome platers, and chrome polishers. [Malo] Chromates also cause allergic contact dermatitis and skin ulcerations.
<b>Job Task Category</b>	Heating or Machining Metal
<b>Exposed To</b>	Allergens

This chart names the job task, the diseases associated with it, and how someone might be exposed to the agents of that disease.

## Industry

Browse Haz-Map	
Industry Name	Florists
Definition	Establishments primarily engaged in the retail sale of cut flowers and growing plants. Establishments primarily engaged in the -retail sale of seeds, bulbs, and nursery stock are classified in Industry 5261, and greenhouses and nurseries primarily engaged in growing seeds, bulbs, flowers, and nursery stock are classified in Agriculture, Industry 0181. Florists-retail; Flowers, fresh-retail; Potted plants-retail
Category	Retail Trade
SIC Code	5992

Industry information comes from the *Standard Industrial Classification (SIC) System*. The chart describes and defines the industry.

## Non-Occupational Activities

Browse Haz-Map	
Activity Name	Glassblowing
Definition	Potential exposure to arsenic, inorganic fluorides, hydrogen fluoride, lead, and silica; [Pike, S. Art and Artists. In: Sullivan J, Krieger G (eds) Hazardous Materials Toxicology Baltimore: Williams & Wilkins, 1992;695] Potential exposure to metal fumes from colorants, fluorides from etching, and silica from abrasive blasting; [Rom, p. 1466]
Category	Hobbies

The information in this chart comes from a variety of sources, and the Definition field focuses on the hazardous aspects of the activity rather than it's description.

## Processes

Browse Haz-Map	
Process Name	Applying Wood Preservatives
Definition	Railroad ties, marine pilings, fence posts, and telephone poles may be pressure treated with creosote, pentachlorophenol, and ammoniacal copper arsenate (ACA) or chromated copper arsenate (CCA). [ILO Encyclo, Vol. 3 - Pages 71.1-71.12] Pentachlorophenol, creosote, and chromated copper arsenate were banned for sale in the United States to consumers as wood preservatives. CCA is still used commercially as a wood preservative. [ILO Encyclo, Vol. 3 - Pages 96.1-96.54]
Category	OTHER

The information in this chart comes from a variety of sources, and Definition field focuses on the hazardous aspects of the process rather than it's description.

## Symptoms

Browse Haz-Map	
<b>Finding/Symptom</b>	irritability
<b>Definition</b>	Emotional lability, temporary mood change,
<b>Category</b>	Psychological
<b>ICD-9 Code</b>	799.2
<b>Synonyms</b>	mood change; emotional lability

The symptom listings come from the *International Classification of Diseases (ICD-9)*.

## Glossary

On the Agents page, there are many links to the glossary. The glossary provided in Haz-Map has easily understandable definitions of the technical expressions.

Glossary	
<b>accelerator</b>	A chemical used to increase the speed of a chemical reaction in the production of rubber or plastics.
<b>ACGIH</b>	American Conference of Governmental Industrial Hygiene.
<b>acute-moderate syndrome</b>	The onset is acute, but not life threatening. For chemicals, the length of exposure is less than 24 hours. The patient is likely to be seen in a clinic or emergency room, but not admitted to the hospital.
<b>acute-severe syndrome</b>	The onset is acute, severe, and life threatening. For chemicals, the length of exposure is less than 24 hours. The patient is likely to be admitted to the hospital.
<b>aerosol</b>	Small particles, usually in the range of 0.01 to 100 micrometers, dispersed in air; includes liquid (mist) and solid particles (dust).
<b>AIHA</b>	

## Sponsorship:

The Haz-Map is a product of the Specialized Information Services,  
U.S. National Library of Medicine,  
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an agency of the Department of Health and Human Services.

**Practice Questions:**

1. I've been offered a job in a kennel. Someone told me that I could get very sick working with animals in kennels. Is this true?
  
  
  
  
  
  
  
  
  
  
2. I've been coughing a lot and feeling really sick lately. I was wondering if it could be my job. I am a logger. I noticed it seemed to start when we got a new batch of wood in. Is there anything in wood I could be allergic to? I've been a logger for years and this has never happened.
  
  
  
  
  
  
  
  
  
  
3. I have to do a homework assignment on a career. I got assigned beautician! I've already got the information in those books over there on occupational descriptions. Do you have any other information that might be good for my paper?